

Preferences for and perceptions of nature experiences in mountain forests and in urban green spaces

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Introduction

High quality nature experiences and less desirable alternatives

Many people moved from rural areas to cities, after the industrial revolution. In doing so, they found themselves separated from the natural world. The loss of this aspect of their former lives motivated people to look for opportunities to re-establish a relationship with nature (Kuester 1999). Today, modern states are attempting to provide the authentic nature-based experiences being demanded by urban dwellers. Many European cities have responded by establishing and securing urban green spaces, and citizens are going out of their way to enjoy the interactive experiences made possible by these efforts.

The objective of those wishing for a return to pure nature is focused on access to forests, and especially mountain forests, which are perceived as providing the ultimate model of a desirable nature experience. Urban green spaces are perceived as being a less desirable alternative to a high-quality nature experience.

Changing perceptions and preferences with regard to nature experiences

The design, philosophy, and management of urban green spaces have changed dramatically over time. For example, a forested area of 6,400 ha in 2,500 urban green spaces is being established in Berlin, Germany, where 84.5% of citizens visit the urban forest at least once a week (GALK 2010). Data from 1980 showed that only 24% of city residents had visited the forest once a week in that year (Loesch 1980). The marked differences between the urban forest use patterns at these two points in time raises questions as to why the frequency of visits has increased.

Have the expansive changes undertaken—such as increasing the area of urban forests, developing management techniques and improving facilities—changed urban dwellers' perceptions toward nature?

This research aims to answer this question. In the past, forests served as the ultimate model for nature experiences. This study examines how urban dwellers' images of forests have changed over time, as urban green spaces have changed. In other words, are mountain forests still the ultimate

goal of those wishing for a return to pure nature? To answer this question, the researchers conducted a survey of urban dwellers who visited mountain forests and urban green spaces in three Western European cities, each of which has a long history of promoting nature-based experiences for their urban residents. This study investigated respondents' perceptions of their experiences with nature, using an attitudinal rating scale survey.

The hypotheses used for this study were the following:

- Urban dwellers prefer mountain forests over urban green spaces, and perceive direct experiences with nature in mountain forests as having the highest quality.
- People's levels of satisfaction with outdoor recreational activities in mountain forests, and their perceptions of how these experiences benefit their health, are far more positive compared to the experiences of those who visit urban green spaces.
- Urban green spaces are still considered second best to mountain forests, but the gap is gradually becoming smaller.

Materials and Methods

Survey area and target group

To quantify the differences between how nature experiences in mountain forests and urban green spaces are perceived, this study used a destination interview survey, targeting local residents from Vienna (Austria), Zurich (Switzerland), and Freiburg (Germany), who had visited one or more of the eight target areas. The target areas had been selected with the help of local university research teams, and included mountain forests and urban green spaces frequently visited by citizens. Approximately 35 people were interviewed per target area, and data were collected from 300 people. The sample group surveyed was selected randomly from the people who visited the areas. The survey was conducted between 10 a.m. and 6 p.m. in July and August 2012. The average response rate was 30%.

Survey methods

The one-on-one expert interview method (Meuser and Nagel 1991) was used, to avoid introducing errors that would result from insincere responses, or errors of interpretation that might result from using written questions and responses. The interview was conducted in the form of a conversation, using a local language version of the study survey. If the meaning of a statement was not conveyed accurately, or understood by the interviewee, the intention was clarified during the conversation. In this way, errors of over- and under-interpretation were avoided.

Interview survey

The survey was divided into three categories, in order to investigate the differences in urban dwellers' perceptions of, and preferences for, mountain forests versus urban green spaces, as well as their levels of satisfaction with their nature experiences. The three categories used were: (1) evaluation of the quality of the nature experiences at the places visited, (2) level of satisfaction with the recreational activities experienced, and (3) perception of the extent to which the respondent experienced health benefits at the places visited. The questionnaire was modelled on the Likert rating scale, which is used to measure attitudes. Twenty-three statements regarding mountain forests and urban green spaces were developed, and each fixed choice response was assigned a numerical value. Respondents were asked to indicate to what extent they agreed or disagreed with each of the statements. Researchers analysed the results to find midpoints or means of observed values. A t-test was used to compare the mean values of the different attitudes, and further analyses were conducted to determine whether the differences did or did not support the hypotheses.

Results and discussion

Survey results regarding the quality of nature experiences showed that on average, the quality of nature experiences in mountain forests was higher than the quality of nature experiences in urban green spaces. Differences between the two experiences were not found to be statistically significant in all areas surveyed.

Respondents in Zurich reported a higher number of 1.61 on average, for their experiences in mountain forests, compared to their nature experiences in the urban green spaces. The statistical significance of this difference was confirmed, with the t-test value of $p = .004$. Mountain forests were given a higher value than urban green spaces by a difference of .79 in Freiburg ($p = .041$).

Satisfaction with outdoor recreational activities in mountain forests versus outdoor experiences in urban green spaces showed that the hypothesis that peoples' levels of satisfaction and perceptions of mountain forests as being more positive, compared to urban green spaces, was not valid in all surveyed areas. It was found that levels of satisfaction from recreational activities were higher in urban green spaces for all three cities. This can be explained by the high-quality urban green space experience, along with the ready accessibility and amenities provided by modern urban green spaces. The t-test of these results showed that there was no statistically significant difference, between the levels of satisfaction experienced from recreational activities conducted in mountain forests, and activities conducted in urban green spaces.

The evaluation of health benefits in currently visited places also showed that visitors experienced no statistically significant difference in their perception of the benefits gained by visiting urban green spaces and mountain forests. This finding is contrary to the research hypothesis that respondents would perceive greater health benefits from mountain forests than from urban green spaces. The questions were organized around the effects on psychological health and the effects on physiological health, but there was no statistically significant difference between the responses. However, all t-test results had a value of $p = 0.05$, which does not allow rejection of the hypothesis, and so indicates there was no difference.

The recreational motives of visitors showed diverse motives and activities, including forest environmental education, sports and wildlife watching, walking with companion animals, learning, experiencing nature, meditation, and even taking a break during office hours. But their main motivation was refreshment and relaxation; therefore there are no big differences of two different areas significantly.

Table. Survey results regarding the quality of nature experiences, satisfaction with outdoor recreational activities and health benefits.

Vienna	Mountain Forest	Urban Green	t value	Sig.
Nature experience	4.41	4.02	1.364	.180
Recreational activity Satisfaction	4.68	4.78	-.616	.541
Facility and management satisfaction	4.28	4.54	-1.214	.271
Psychological health	4.68	4.93	-1.154	.259
Physiological health	4.65	4.58	.231	.819
Zurich	Mountain Forest	Urban Green	t value	Sig.
Nature experience	4.48	2.87	4.296	.004
Recreational activity Satisfaction	4.80	4.87	-.322	.750
Facility and management satisfaction	4.28	4.57	-.766	.451
Psychological health	4.50	4.43	.113	.911
Physiological health	3.80	4.29	-1.150	.262
Freiburg	Mountain Forest	Urban Green	t value	Sig.
Nature experience	4.09	3.30	2.188	.041
Recreational activity Satisfaction	4.36	4.70	-1.302	.209
Facility and management satisfaction	4.04	4.22	-1.190	.249
Psychological health	4.91	4.90	.067	.947
Physiological health	4.91	5.00	-.951	.353

*Mountain Forest: Wienerberg(Vienna), Zurichberg, Uetliberg(Zurich), Schlossberg(Freiburg)

*Urban Green: Stadtpark, Donauinsel(Vienna), Backeranlage(Zurich), Stadtgarten(Freiburg)

Conclusion: Summary of research findings

While visitors perceived that there was a difference in the quality of the natural landscapes and the nature experiences in urban green spaces and mountain forests, they indicated no differences in their satisfaction levels between recreational activities conducted in mountain forests or in urban green spaces. There was no difference in their assessment of the management and facilities at either site, and they felt that both sites offered the same positive health benefits. The hypotheses of this study were found to be invalid, with the exception of the first item, regarding the quality of the nature experience.

These findings can be explained by the fact that urban dwellers' perceptions of nature-based recreational activities, curative effects, and the quality of their experiences in nature have been diminished, as regards their ability to perceive the differences between urban green spaces and mountain forests. They also experience less stress when visiting urban green spaces, because these spaces are readily accessible.

It is thought that people's once-heightened sensitivity to the differences between modern urban green spaces and mountain forests has been muted, as a consequence of the diverse advantages of the former. In other words, urban dwellers get sufficient levels of satisfaction, and extremely positive perceptions of the health benefits, from spending time in urban green spaces. The results of this study show that mountain forests are no longer regarded as the preeminent nature experience, in terms of health benefits or satisfaction from recreational activities. Aside from their significance as pure natural landscapes, they no longer serve as a model.

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